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1. (Amended) An image processing apparatus for generating an image of a virtual space according to a user's operation using ray space data comprising:

a recording unit adapted to record the ray space data;

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a setting unit adapted to set a sampling rate for ray space data read out from said recording unit according to the user's operation, the sampling rate indicating a distance between pixels to be sampled;

a reconstructing unit adapted to read out ray space data from said recording unit according to the sampling rate set by said setting unit, and to reconstruct an image of the virtual space; and

an interpolation unit adapted to interpolate pixels of the image reconstructed by said reconstructing unit until the size of the image becomes a predetermined size.

Claim 2 has been cancelled.

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3. (Amended) The apparatus according to claim 1, wherein the setting unit determines the sampling rate on the basis of the moving speed in a virtual space designated by the user.

4. (Amended) The apparatus according to claim 1, wherein the setting unit determines the sampling rate on the basis of the manipulation speed of an object in a virtual space designated by the user.

Claim 5 has been cancelled.

Claim 6 has been cancelled.

Claim 7 has been cancelled.

Claim 8 has been cancelled.

Claim 9 has been cancelled.

10. (Amended) An image processing method for reconstructing an image of a virtual space according to a user's operation using ray space data recorded in a recording means, comprising:

*A3 cancel*  
a setting step of setting a sampling rate for ray space data read out from the recording means according to the user's operation, the sampling rate indicating a distance between pixels to be sampled;

a reconstruction step of reading out ray space data from the recording means in accordance with the sampling rate set in said setting step, and reconstructing an image of the virtual space; and

an interpolation step of interpolating pixels of the image reconstructed by said reconstruction step until the size of the image becomes a predetermined size.

Claim 11 has been cancelled.

Claim 12 has been cancelled.

Claim 13 has been cancelled.

Claim 14 has been cancelled.

Claim 15 has been cancelled.

Claim 16 has been cancelled.

Claim 17 has been cancelled.

Claim 18 has been cancelled.

Claim 19 has been cancelled.

Claim 20 has been cancelled.

Claim 21 has been cancelled.

Claim 22 has been cancelled.

Claim 23 has been cancelled.

Claim 24 has been cancelled.

Claim 25 has been cancelled.

Claim 26 has been cancelled.

Claim 27 has been cancelled.

Claim 28 has been cancelled.

Claim 29 has been cancelled.

Claim 30 has been cancelled.

31. (Amended) A computer-readable storage medium for storing a program which makes a computer function as an image processing apparatus for generating an image virtual space according to a user's operation using ray space data recorded in a memory, the program comprising:

*A4 cancel.*  
a setting step of setting a sampling rate for ray space data read out from the memory according to the user's operation, the sampling rate indicating a distance between pixels to be sampled;

a reconstructing step of reading out ray space data from the memory according to the sampling rate set in said setting step, and reconstructing an image of the virtual space; and

an interpolation step of interpolating pixels of the image reconstructed in said reconstructing step until the size of the image becomes a predetermined size.

Please add new claims 32-39 as follows:

*A5 cancel*  
--32. (New) The apparatus according to Claim 1, wherein ray space data is managed in a (x,u) space, wherein "x" represents a position where the light ray intersects the X-axis and "u" represents a tangent of an angle the light ray makes with the Z-axis.

33. (New) The apparatus according to Claim 32, wherein a quantization of the position  $x$  is done using the minimum spacing between two neighboring light rays on the  $x$ -axis, a quantization of  $u$  is done using the tangent of an angle between two neighboring pixels and a camera view point position.

34. (New) The apparatus according to Claim 32, wherein the ray space data read out by said reconstructing unit is data discretely sampled on a line in a  $(x,u)$  space according to the sampling rate set by said setting unit.

35. (New) The method according to claim 10, wherein the setting step determines the sampling rate on the basis of the moving speed in a virtual space designated by the user.

36. (New) The method according to claim 10, wherein the setting step determines the sampling rate on the basis of the manipulation speed of an object in a virtual space designated by the user.

37. (New) The method according to Claim 10, wherein ray space data is managed in a  $(x,u)$  space, wherein " $x$ " represents a position where the light ray intersects the  $X$ -axis and " $u$ " represents a tangent of an angle the light ray makes with the  $Z$ -axis.

38. (New) The method according to Claim 37, wherein a quantization of the position  $x$  is done using the minimum spacing between two neighboring light rays on the  $x$ -axis, a quantization of  $u$  is done using the tangent of an angle between two neighboring pixels and the camera view point position.

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